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Medscape Dermatology Clinic

Atrophic Telangiectatic Plaque on the Leg

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Clinical Presentation

Patient

An 84-year-old woman.

History

The patient was admitted to the hospital by the neurology service because of facial paralysis and slurred speech. It was believed that her symptoms were due to a cerebrovascular accident (stroke). Her admitting cutaneous examination revealed an atrophic telangiectatic plaque on the leg. Because communication with the patient was difficult, the history of the lesion could not be obtained. A dermatology consultation was obtained and a biopsy was performed.

Physical Exam

An atrophic, telangiectatic plaque measured 7.0 x 5.0 cm, with both hyperpigmented and hypopigmented areas and mild scale peripherally (Figure 1). There was no tenderness. The duration of the plaque was unknown.

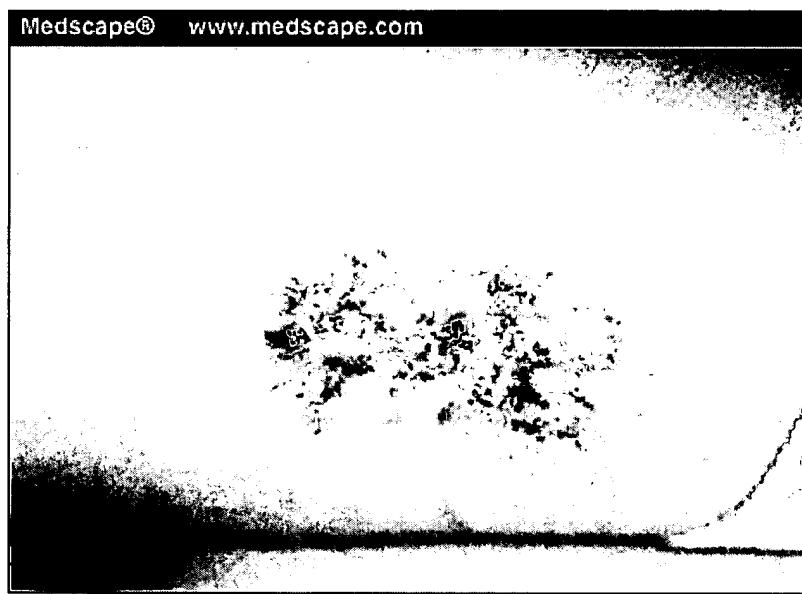


Figure 1. Atrophic telangiectatic plaque (photo courtesy of Dr. Chapman).

Histopathology

Hyperkeratosis, epidermal atrophy, and mild edema of the upper dermis. There were scattered necrotic nuclei in the epidermis and dense collagen bundles with hyalinization. Large, telangiectatic vessels were present in the upper dermis. No hair structures were present.

1. What is your diagnosis?

- A) Allergic contact dermatitis.
- B) Cellulitis.

C) Radiation dermatitis.

D) Squamous cell carcinoma.

Discussion

Radiation damage is a consequence of ionizing radiation within the DNA of the cell. Rapidly proliferating or malignant cells are more radiosensitive and thus more likely to be affected by the radiation. Generally, when radiation is given in small divided doses, normal cells and tissue recover between doses. However, if large doses of radiation are given, skin changes can occur, as seen in this patient.

Radiation dermatitis can be classified into early- and late-stage, or acute and chronic. The acute changes include erythema about a week after large doses of radiation are given. Large, painful blisters at the site of radiation are also common. The area typically heals with desquamation and hyperpigmentation. If the dose of radiation is large enough, the area may ulcerate about 2 months later and slowly heal with atrophy, telangiectasia, and irregular pigmentation. Some lesions of acute radiation dermatitis may never completely heal, and will likely never return to normal.

Chronic radiation dermatitis begins many months to years after the initial dose of radiation. The area typically heals with atrophy, telangiectasia, hypopigmentation, and hyperpigmentation. The combination of these 4 signs is termed poikiloderma and is typical of chronic radiation dermatitis. In the past, this condition was most commonly seen in radiologists and radiation technicians who were constantly exposed to ionizing radiation. Chronic radiation dermatitis rarely occurs today, but can be induced in unique ways, such as a case that was induced by multiple cardiac catheterizations.^[1]

Over time, areas of chronic radiation dermatitis show increased freckling and dryness and become smooth and shiny. There is thickening of the subcutaneous tissue, which becomes firm, fibrotic, and nonmobile over the underlying structures.

Most lesions of radiation dermatitis lie dormant or cause very little discomfort, but because of the risk of developing squamous cell or basal cell carcinoma, these lesions require long-term follow-up.^[2,3]

Because this patient was uncommunicative when she was admitted to the hospital, we initially did not know about her history of radiation exposure. The diagnosis of radiation dermatitis was based on histology and clinical presentation. After our patient recovered somewhat, she revealed that more than 25 years ago she had received radiation treatment for a squamous cell carcinoma. The plaque on her leg developed about a year after this treatment, and had been stable and unchanged since then.

Treatment

Treatment is rarely needed for lesions of chronic radiation dermatitis, the type of radiation dermatitis our patient had. Close monitoring for squamous cell carcinoma within an area of radiation dermatitis is important, and biopsy should be performed when a squamous cell carcinoma is suspected.^[4] Protection from sunlight and extremes of cold and heat are also required. Moisturizing with a bland emollient decreases dryness and pruritis.

Acute radiation dermatitis can cause discomfort and delay completion of radiation therapy, which can have a negative influence on the overall therapeutic outcome.^[5] Treatment with topical steroids has been shown to be beneficial and can lead to more timely completion of the radiation therapy.^[6] Topical granulocyte-macrophage colony-stimulating factor has also been shown to be beneficial.^[7]

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